Remarks

Applicants have studied the Official Action of March 14, 2006 together with applicants' last response, the prior art cited, and the entire specification. As a result of this review, it is believed the Examiner's concerns should be met by the accompanying amendments, which insert as an element of all the claims, in slightly varying words, that the ability of the elongated flexible member to return to its original shape is expressed in terms of a bending and straightening of its axis. That is, as will be seen in newly amended claim 1, for example, the generally elongated flexible member is susceptible of bending to bend its axis, and the member is capable of returning to its original shape after it is so deformed. In claim 13, the limitation "to straighten said axis" expresses the concept, and in claim 20, which recites the presence of two generally elongated flexible members, they are both able to flex to bend their axes and able to return to their original shapes.

The concept of bending of the axis is supported in lines 3-8 of page 4, speaking of a bending of the "tubular support" which is able to return to its original shape, by lines 7-11 of page 6, which mentions a possible bending of "even more than 90°" and "springing back" to the original shape, and Figures 3a and 3b together with the text relating to them, where it is clear the flexible member has been bent about 90° and has sprung back to its original straight orientation. As indicated at page 6, lines 6-7 as well as Figures 3a and 3b, the base end of the flexible member is typically anchored in a door jamb, so any significant force meeting it, such as the illustrated fork lift, will certainly bend the member and its axis. Bending of the "elongated flexible support member" is not a simple denting – it means that, as the axis is bent, the working end of the elongated flexible support member is completely disoriented, losing contact with any beam it is supposed to receive or, if it is a transmitter, becoming completely ineffective by sending the beam to a place other than its intended receiver.

With respect to the Simmons ('046) reference, applicants repeat, as in the last response, that the element of Simmons that Examiner has identified as a flexible support member is not flexible and Simmons does not describe it as flexible. Indeed, the words, "flexible," "bend," and "bending" do not appear anywhere in Simmons. A brief review of Simmons' specification will show that his safety sensor system utilizes rollers, axles, wheels, and brackets, not an elongated flexible support member, much less one whose axis can be bent and return to its original shape. Simmons is thus not a proper Section 102 anticipation. Examiner's gratuitous statement that "everything is flexible to a

degree" (page 6 of the Official Action) disregards that claim words are to be accorded their ordinary and customary meaning, and, again, ignores the clear requirement in every one of applicants' claims that the flexible member must be capable of returning to its original shape after the deforming or bending force is released.

Referring now to the Strand ('417) reference, a review of his Figure 3 and its description together with the description of operation of the device in column 3, lines 18-37 again shows that an obstacle contacted in the path of the door will cause a deformation in the outer covering 44, which also causes actuating member 54 to interrupt the light beam, in turn causing the door to reverse its direction or otherwise react. A deformation causing interruption of the light beam, which otherwise would continue to project in a straight line, is not a bending of the axis of anything. As illustrated in applicant's Figures 3a and 3b and as described above, applicant's entire flexible member is bent, which results not only in a bending of its axis but a disorientation of the working end. Bending the axis means the working end of applicant's flexible support member is completely out of position, while in Strand, both his light beam transmitter and its receiver remain in their original places even during the perturbation. Thus, Strand also does not provide an anticipation.

As demonstrated above, major limitations of applicants' claims are missing from Simmons and Strand, and they are not supplied by Larsson, Levin, or Evans. Each of Examiner's Section 103 rejections posits that "all of the elements of the instant invention" are in Simmons or Strand but, as demonstrated above, they are not. The rejections under 35 USC 103 should also be withdrawn.

In addition to the axis-bending limitation, the amendments to claim 20 include insertions in response to Examiner's Section 112 objections. In particular, the term "presence" has been removed and the path has been defined to mean a predetermined path for opening and closing the automatic door. A "person or object" is now detected instead of the presence of a person or object.

A set of claims showing the amendments is appended.

Respectfully submitted,

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1. (currently amended) A self-correcting sensing element device comprising a base, a generally elongated flexible support member having a base end, a working end, and an axis in the direction of elongation, said base end fastened to said base, and a sensing element in said working end, said generally elongated flexible support member being susceptible of bending to bend said axis, said generally elongated flexible support member also being capable of returning to its original shape after being deformed.
2. (original) Sensing element device of claim 1 wherein said sensing element is oriented at 90° from said axis of said generally elongated support member.
3. (original) Sensing element device of claim 1 wherein said sensing element is oriented in the same direction as the axis of said generally elongated flexible support member.
4. (original) Sensing element device of claim 1 wherein said flexible support member is made of a material having a durometer Shore hardness A in the range of 40 to 80.
5. (original) Sensing element device of claim 4 wherein said material has a dorometer Shore hardness A in the range of 50 to 70.
6. (original) Sensing element device of claim 1 including wires for providing power to said sensing element, said wires being strung through said flexible support member.
7. (original) Sensing element device of claim 1 including wires for connecting said sensing element to a system for detecting the presence of a person or object in a doorway.
8. (original) Sensing element device of claim 7 installed in a doorway.
9. (original) Sensing element device of claim 7 wherein said sensing element is oriented 90° from the axis of said generally elongated flexible member.
10. (original) Sensing element device of claim 7 wherein said sensing element is a photocell.
11. (original) Sensing element device of claim 7 wherein said sensing element is a microwave transceiver.
12. (original) Sensing element device of claim 7 wherein said sensing element is an ultrasonic device.
13. (currently amended) A safety system for an automatic door for opening and closing a path through a doorway, for detecting a person or object in said path in the process of opening or closing said automatic door, comprising at least one radiation element positioned to detect presence or motion in or near said doorway and an electrical presence detecting system responsive thereto, wherein said at least one radiation element is mounted on a flexible, generally elongated support, said flexible, generally elongated support having an axis in the direction of elongation, said flexible, generally elongated support being capable of flexing

under force to bend said axis, said flexible generally elongated support being capable of returning to its original shape to straighten said axis immediately after the release of a bending force.

14. (original) Safety system of claim 13 wherein at least one of said radiation elements is mounted at 90° from the direction of elongation of said support.

15. (previously presented) Safety system of claim 13 wherein at least one of said radiation elements is mounted at the end of one of said flexible elongated supports.

16. (original) Safety system of claim 13 wherein said flexible generally elongated support is made of material having a dorometer Shore hardness A in the range of 40-80.

17. (original) Safety system of claim 13 wherein said flexible generally elongated support is made of material having a dorometer Shore hardness A in the range of 50-70.

18. (original) Safety system of claim 13 wherein said at least one radiation element is a photocell.

19. (original) Safety system of claim 13 wherein said at least one of said radiation elements is a passive radiation element.

20. (currently amended) A system for detecting [~~the presence of~~] a person or object in the path of an automatic door in the process of opening or closing, said path being a predetermined path for opening and closing said automatic door, comprising a [~~presence~~] detecting system for detecting said person or object including at least one radiation transmitter on one side of said door and at least one radiation detector on the other side of said door, wherein each of said transmitter and said detector [~~are~~] is mounted on a flexible, generally elongated support [~~supports~~], said flexible generally elongated supports being capable of flexing under a bending force to bend said axis and also being capable of returning to their original shape immediately after the release of [~~a~~] said bending force.